

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0006] with the following amended paragraph:

[0006] In a time-based analysis, the performance tool periodically takes a snapshot of the current state of the system after a predetermined time, or number of clock deck-cycles. In an event-based analysis, a snapshot is taken every time a certain event occurs within the system, such as a cache miss or branch mispredict. The sampled performance statistics are used to build a profile of the performance of the application running on the monitored system. For example, to identify code that causes an excessive number of data cache misses, a performance analysis tool can use event based sampling (the event being a data cache miss) to profile application code and determine which code modules are using memory inefficiently. These code modules may then be optimized.

Please replace paragraph [0015] with the following amended paragraph:

[0015] The techniques may be used in desktop, server, network, mobile, or embedded applications, whether wired or wireless. The techniques may be particularly useful for mobile devices, such as laptop computers, personal digital person-data assistants (PDAs), cellular telephones, and smart portable devices, where code power consumption may affect battery performance. Persons of ordinary skill in the art will appreciate that the techniques may be used in other processor environments, as well. Further still, while the described techniques measure performance based on power consumption, the techniques may measure performance based on a combination of metrics, of which power consumption is one. As will be explained in further detail below, any metric indicative of power consumption may be used for profiling code execution. And the metrics may result from power usage in any monitored machine subsystem, component, or embedded unit.

Please replace paragraph [0024] with the following amended paragraph:

[0024] The architecture 200 includes a power measurement module (PMM) 204 that may measure power usage of the system 100 or any combination of the subsystems 112-120, for example. The term power usage, as used herein, may include either the power delivered to or the power consumed by an element. The PMM 204 represents any of the known techniques for measuring power within a process-based system. The PMM 204, for example, may be part of the system 100 and coupled to the CPU 102 and subsystems 112-120. The PMM 204 may measure current or power as delivered from the power supply 124, power distribution network 126, or other source to the system 100 or any subsystem, component, or functional unit thereof, for example. Thus with the example of FIG. 1 (and FIG. 3), the PMM 204 may measure power usage of any subsystem, component, or functional unit shown. The PMM 204 may measure power usage by one or any combination of the elements shown, as desired.

Please replace paragraph [0025] with the following amended paragraph:

[0025] The PMM 204 monitors power consumption for an adjustable granularity of power usage, of which microamps, millamps, amps (for current), microwatts, milliwatts, and watts (for power) are example granularities. This granularity may be adjusted by a power sampling module (PSM) 206 coupled to the PMM 204.

Please replace paragraph [0033] with the following amended paragraph:

[0033] FIG. 4 illustrates an example implementation of architecture 400, similar to the architecture 200. A DC power source 402, such as a battery in a mobile or embedded device, supplies power to a subsystem 404 of the architecture 400. The subsystem 404 represents any machine subsystem, but in this example, it could also represent any component of a system or functional unit of the CPU. To measure the amount of power transmitted, a PMM 406 is coupled between the power source 402 and the subsystem 404. Alternatively, the PMM 406 may be coupled either to the power source 402 or to the subsystem 404. The PMM 406 is also coupled to a PSM 408 via a power monitoring interface 410, which may

communicate with the PMM 406 to receive an indication that a desired quantum of power delivery from the power source 402 to the subsystem 404 has occurred. The PSM 408 further includes a system profiler 412 coupled to a CPU 414 for taking a snapshot of the CPU 414 upon a signal from the PMM 406. Alternatively, the system profiler 412 may be coupled to any system, subsystem (e.g., the subsystem 404), or combination of these within the architecture 400. The system profiler 412 is also coupled to a performance analysis interface 416 within the PSM 408. The interface 416 may provide the snapshot of the CPU 414 to a PAM 418, which may perform profile analysis on the data. The PAM 418 may display this analysis data to a user via a display 420 320, generally shown.